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Question Paper Code : 10267

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Fourth Semester

Computer Science and Engineering

CS 2255/141405/CS 46/CS 1254/10144 CS 406/080250009 – DATABASE MANAGEMENT SYSTEMS

(Common to Information Technology)

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List four significant differences between a file-processing system and a DBMS.

2. What are the different types of Data Models?

3. Describe a circumstance in which you would choose to use embedded SQL rather than using SQL alone.

4. List two major problems with processing of update operations expressed in terms of views.

5. Give an example of a relation schema R and a set of dependencies such that R is in BCNF, but not in 4NF

6. Why are certain functional dependencies called as trivial functional dependencies?

7. List down the SQL facilities for concurrency.

8. What benefit does strict two-phase locking provide? What disadvantages result?

9. Mention the different Hashing techniques.

10. When is it preferable to use a dense index rather than a sparse index? Explain your answer.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss in detail about database system architecture with neat diagram.

Or

(b) Draw an E-R diagram for a banking enterprise with almost all components and explain.

12. (a) Explain in detail about Relational Algebra, Domain Relational Calculus and Tuple Relational Calculus with suitable examples.

Or

(b) Briefly present a survey on Integrity and Security.

13. (a) Explain in detail about 1NF, 2NF, 3NF and BCNF with suitable examples.

Or

(b) Describe about the Multi-Valued Dependencies and Fourth normal form with suitable example.

14. (a) Discuss in detail about Transaction Recovery, System Recovery and Media Recovery.

Or

(b) Write down in detail about Deadlock and Serializability.

15. (a) Construct a B+ tree to insert the following key elements (order of the tree is 3) 5, 3, 4, 9, 7, 15, 14, 21, 22, 23.

Or

(b) Describe in detail about how records are represented in a file and how to organize them in a file.

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